

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended) An image encoding apparatus comprising:
~~a dictionary storage device configured to store means for storing~~ a plurality of bases based on a predetermined two-dimensional function for generating a predetermined two-dimensional pattern, the predetermined two-dimensional function including parameters for curving the predetermined two-dimensional pattern;
~~a converted configured to decompose conversion means for decomposing~~ a coding target image by using the plurality of bases on the basis of a predetermined conversion rule, and ~~e~~onverting to convert the coding target image into basis information including,
index information to a basis used for decomposing the coding target image,
a coefficient by which the basis specified by the index information is multiplied,
and positional information for specifying a position where a pattern made by multiplying the basis specified by the index information by the coefficient is restored;
and
~~an encoder configured to generate encoding means for generating~~ compression data including a compression code made by encoding the basis information on the basis of a predetermined compression coding rule.

Claim 2 (Currently Amended) An image encoding method comprising:
~~a conversion step in which conversion means decomposes~~ decomposing a coding target image on the basis of a predetermined conversion rule by using a plurality of bases stored in dictionary ~~storage device storing means~~ and ~~converts converting~~ the coding target image into basis information including,

index information to a basis used for decomposing the coding target image, a coefficient by which the basis specified by the index information is multiplied,

and positional information for specifying a position where a pattern made by multiplying the basis specified by the index information by the coefficient is restored, wherein the plurality of bases are based on a predetermined two-dimensional function for generating a predetermined two-dimensional pattern, and the predetermined two-dimensional function includes parameters for curving the predetermined two-dimensional pattern; and

~~an encoding step in which encoding means generates generating~~ compression data including a compression code made by encoding the basis information on the basis of a predetermined compression coding rule.

Claim 3 (Original) An image encoding method according to claim 2, wherein the predetermined two-dimensional function further includes parameters for making the predetermined two-dimensional pattern move, rotate, and expand and shrink in two directions.

Claim 4 (Currently Amended) An image encoding method according to claim 2, wherein the encoding ~~means~~ incorporates the parameters of each of the plurality of bases stored in the dictionary storage device ~~means~~ in the compression data.

Claim 5 (Currently Amended) ~~An image encoding program allowing a computer to function as:~~ A computer readable medium encoded with a computer program configured to cause an information processing apparatus to execute a method, the method comprising:

~~dictionary storage means~~ for storing a plurality of bases based on a predetermined two-dimensional function for generating a predetermined two-dimensional pattern, the predetermined two-dimensional function including parameters for curving the predetermined two-dimensional pattern;

~~conversion means~~ for decomposing a coding target image by using the plurality of bases on the basis of a predetermined conversion rule, and converting the coding target image into basis information including,

index information to a basis used for decomposing the coding target image,
a coefficient by which the basis specified by the index information is multiplied,

and positional information for specifying a position where a pattern made by multiplying the basis specified by the index information by the coefficient is restored;
and

~~encoding means~~ for generating compression data including a compression code made by encoding the basis information on the basis of a predetermined compression coding rule.

Claim 6 (Currently Amended) An image decoding apparatus comprising:
~~a dictionary storage device configured to store means for storing~~ a plurality of bases based on a predetermined two-dimensional function for generating a predetermined two-dimensional pattern, the predetermined two-dimensional function including parameters for curving the predetermined two-dimensional pattern;

~~a decode configured to decode decoding means for decoding~~ compression data and ~~generating generate~~ a basis information, the compression data including,
a compression code made by encoding the basis information including index information to a basis used for restoring a decoding target image,

a coefficient by which the basis specified by the index information is multiplied,

and positional information for specifying a position where a pattern made by multiplying the basis specified by the index information by the coefficient is restored; and

an inverse converter configured to generate conversion means for generating the decoding target image by applying a predetermined inverse conversion rule to the basis information decoded by the decoder decoding means.

Claim 7 (Currently Amended) An image decoding method comprising:

~~a step in which decoding means decodes~~ decoding compression data including,

a compression code made by encoding basis information including index information to a basis used for restoring a decoding target image on the basis of a predetermined inverse conversion rule among a plurality of items of index information to a plurality of bases stored in a dictionary storage device means,

a coefficient by which the basis specified by the index information is multiplied, and

positional information for specifying a position where a pattern made by multiplying the basis specified by the index information by the coefficient is restored, wherein the plurality of bases are based on a predetermined two-dimensional function which generates a predetermined two-dimensional pattern and includes parameters for curving the two-dimensional pattern; and

an inverse conversion step in which inverse conversion means generates generating the image ~~for to be decoding decoded~~ by applying a predetermined inverse conversion rule to the basis information decoded by the decoder decoding means.

Claim 8 (Original) An image decoding method according to claim 7, wherein the predetermined two-dimensional function further includes parameters for making the predetermined two-dimensional pattern move, rotate, and expand and shrink in two directions.

Claim 9 (Currently Amended) The image decoding method according to claim 7, wherein the decoder decoding means makes the dictionary storage storing means device store the plurality of bases on the basis of parameters for generating each of the plurality of bases included in the compression data.

Claim 10 (Currently Amended) An image decoding program allowing a computer to function as: A computer readable medium encoded with a computer program configured to cause an information processing apparatus to execute a method, the method comprising:

dictionary storage means for storing a plurality of bases based on a predetermined two-dimensional function for generating a predetermined two-dimensional pattern, the predetermined two-dimensional function including parameters for curving the predetermined two-dimensional pattern;

decoding means for decoding compression data and generating a basis information, the compression data including,

a compression code made by encoding the basis information including index information to a basis used for restoring a decoding target image,

a coefficient by which the basis specified by the index information is multiplied,

and positional information for specifying a position where a pattern made by multiplying the basis specified by the index information by the coefficient is restored; and

~~inverse conversion means for generating the decoding target image by applying a predetermined inverse conversion rule to the basis information to be decoded by the decoding means.~~

Claim 11 (New) An image encoding apparatus comprising:

dictionary storage means for storing a plurality of bases based on a predetermined two-dimensional function for generating a predetermined two-dimensional pattern, the predetermined two-dimensional function including parameters for curving the predetermined two-dimensional pattern;

conversion means for decomposing a coding target image by using the plurality of bases on the basis of a predetermined conversion rule, and converting the coding target image into basis information including,

index information to a basis used for decomposing the coding target image, a coefficient by which the basis specified by the index information is multiplied,

and positional information for specifying a position where a pattern made by multiplying the basis specified by the index information by the coefficient is restored; and

encoding means for generating compression data including a compression code made by encoding the basis information on the basis of a predetermined compression coding rule.